

Tennessee Pollution Prevention Partnership Success Story



DENSO Manufacturing Tennessee, Inc.
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Partner Recycles Metal in Wastewater and Reduces Landfill Waste

The Member

DENSO Manufacturing Tennessee, Inc., is part of DENSO Corporation's global network of 74 subsidiaries in 29 nations and the fourth largest producer of advanced technology, components and systems for all major automakers. The Tennessee facilities employ more than 2,900 associates at two locations, Maryville and Athens. Automotive components and systems produced at the Tennessee operations include the following:

Maryville: Alternators, starters, instrument clusters, and electronic components

Athens: Oxygen sensors, fuel injectors, air-flow meters, ignition coils, and spark plugs

The Story - Metal Soap Wastewater

DENSO's Starter/Alternator phosphate coating lines discharged 1,000 gallons of metal soap wastewater each week. When dumped, the metal soap baths are 200°F and contain high concentrations of iron, zinc, and calcium. The metal soap bath is 11% metal and soap and 89% water.

The baths had to be pumped-out and sent off-site for disposal because DENSO's on-site wastewater pre-treatment plant was not designed to handle the metal soap wastewater. The metal soap wastewater could only be mixed with the wastewater from the entire Starter/Alternator Plant causing slugs.

In 2001, DENSO sent 223.4 tons of the metal soap wastewater to Chestnut Ridge Landfill for solidification and disposal at a cost of \$19,555.

New Idea - Change Wastewater Pre-Treatment Plant to Handle Metal Soap

The solution was to install new pipes and fixtures that cost \$500 and pump the metal soap wastewater directly into the sludge tanks at our wastewater pre-treatment plant.

The Success

100% of the metal soap wastewater formerly sent to the landfill is now treated on-site and the recovered metals are sent off-site for recycling. DENSO now treats 50,000 gallons of metal soap wastewater on-site instead of sending it to the landfill.

The projected annual cost savings from treating the metal soap wastewater on-site is \$13,380.

The Pollution Prevented

This project prevented 223.4 tons of landfill waste each year from the phosphate coating lines.